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ALOE VERA: A MEDICINAL HERB

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ABSTRACT

Aloe vera is a herb distributed all over the world. The herb is used internally to counter most of the problems of digestion, diabetes, immune system, and peptic ulcers. It also contains anti-bacterial, anti-septic, anti-viral, anti-inflammatory, anti-tumor, anti-oxidant, moisturizing, anti-aging effects. This review highlights the importance of using Aloe vera as a medicinal herb.

Keywords:

Aloe vera. Medicinal, Herb.

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1. INTRODUCTION

The name Aloe comes from the Arabic word alloeh meaning a shining bitter substance¹. The botanical name of Aloe Vera is Aloe Barbadensis Miller. It belongs to the Liliaceae family, which has about 360 species. Aloe Vera is a cactus like plant that grows readily in hot and dry climate and currently, because of high demand, is cultivated in large quantities. It grows mainly in dry regions of Asia, Africa, America and Europe. In India, it is found in Maharashtra, Andhra Pradesh, Gujarat, Rajasthan and Tamil Nadu². Cosmetics and some medicinal products are made from the mucilaginous tissue at the center of the Aloe vera leaf and are called Aloe Vera gel. This gel is a clear, tasteless, thin, jelly like material. The other part of the plant is a group of specialized cells known as the pericyclic tubules. They occur just beneath the outer green rind of the leaf. These cells produce exudates that consist of bitter yellow latex with powerful laxative-like action². This plant has yellow flowers. The leaves, arranged in a rosette configuration are triangular and spear like and have thorny ridges.

2. CHEMICAL CONSTITUENTS OF THE PLANT

There are over 100 active biologic constituents found within aloe³. The plant is a rich source of natural, health –promoting substances:

- **Polysaccharides:** Aloe gel is 99% of water with a pH of 4.5 and is a common ingredient in many non-prescription skin salves. The gel has an emollient polysaccharide, glucomannan. It is a good moisturizer, and is used in many cosmetics. Other polysaccharides such as arabinan, arabinorhamnogalactan, galactan, galactogalacturan, glucogalactomannan and glucuronic acid containing polysaccharides are isolated from the Aloe vera inner leaf gel part⁴.
- **Anthraquinones /Anthrones:** Aloe emodin, aloetic acid, anthranol, aloin A and B, isobarbaloin emodin ester of cinnamic acid are also found in Aloe vera.
- **Vitamins/ Minerals:** It provides vitamin C, A, E, B, B Carotene, Zinc, Calcium, Copper, Magnesium, Manganese and phosphates.
- **Enzymes:** It contains alliasse, alkaline phosphatase amylase catalase, lipase peroxidase and corboxy peptidase enzymes.
- **Amino acids:** It provides 20 of the 22 human required amino acids and 7 of the 8 essential amino acids.
- **Plant sterols:** 4 plants steroids campesterol, cholesterol, bsitosterol and lupeol.

3. THERAPEUTIC USES OF ALOE VERA

The Aloe vera exudates are transparent, slippery mucilage or gel given by the thin walled tubular cells in the inner central zone (parenchyma) of the leaf. This mucilage was applied to inflamed skin and during the 20th century, it was helpful for radiation burns. The bioactive compounds are used as astringent, homeostatic, antidiabetic, antiseptic, antibacterial, antioxidant and anti-tumor agents and also effective in treating stomach ailments, gastrointestinal problems, constipation, radiation injury, wound healing, burns, dysentery, diarrhea and treatment of skin diseases. Currently the plant is widely used in skin care⁵.

Aloe vera has 75 potentially active constituents, vitamins, enzymes, minerals, sugar, lignin, saponin, salicylic acid and amino acids.

- **Anti-oxidant activity:** It contains vitamin A, B Carotene, C and E. They are anti-oxidants. It provides calcium, magnesium, potassium, sodium, and zinc minerals which are essential for the proper functioning of various enzymes which are antioxidants.
- **Wound healing:** Cumulative evidence supports the use of Aloe Vera for the healing of first to second degree burns⁶. The wound healing properties of Aloe Vera gel has been attributed to mannose-6 phosphate⁷. Brady kinase enzymes help in the reduction of excessive inflammation, when applied to the skin topically.
- **Anti-ulcer activity:** A number of glycoproteins present in Aloe vera gel have anti-tumor and anti-ulcer effects⁸.
- **Anti-bacterial and anti-viral activity:** Aloe vera gel provides 12 anthraquinones which are phenolic compounds traditionally known as laxatives. Aloin and Emodin acts as analgesics, antibacterials and antivirals⁹.
- **Anti-septic and analgesic properties:** Aloe vera gel provides some fatty acids like cholesterol, campesterol, B-sisosterol and lopesol. All of them have anti-inflammatory action and lopesol also possess antiseptic and analgesic properties¹⁰.
- **Other medicinal uses:** Traditionally, Aloe vera gel is used both topically (treatment of wounds, burns, and skin irritations) and internally to treat constipation, ulcers, diabetes,

headache, arthritis, immune system deficiency¹¹. Aloe vera contains polysaccharides which increase the insulin level and show hypo glyceemic properties¹².

- ***Cosmetics and skin protection application:*** Aloin and its gel are used as skin tonic for pimples. Aloe vera is also used for soothing the skin and keeping the skin moist to help avoid flaky scalp and skin in harsh and dry weather¹³. Aloe vera show laxative effect due to presence of anthraquinone. It has also been reported to have moisturizing and anti-aging effect along with anti-septic and anti-diabetic effects¹².

4. CONCLUSION

In late years, ethno -botanical and traditional uses of natural compounds, especially of the plant origin receive much attention as they are well tested for their efficacy and generally believed to be safe for human use. Many Indian herbs are being used in traditional practices to cure various human ailments. Aloe vera, has an important place among such wound healing medicinal plants it can also be used in treating many diseases and use as cosmetics products also. Furthermore property of Aloe vera has also made a better understanding of its use as a potential drug in addition to contemporary drugs further research should be encouraged to utilize the herbs with medicinal properties.

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